

## Cross-cultural Medicine and Diverse Health Beliefs Ethiopians Abroad

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A large number of Ethiopians reside abroad as refugees, immigrants, or students. To provide adequate care, physicians must understand their beliefs about health and medicine. To Ethiopians, health is an equilibrium between the body and the outside. Excess sun is believed to cause *mitch* ("sunstroke"), leading to skin disease. Blowing winds are thought to cause pain wherever they hit. Sexually transmitted disease is attributed to urinating under a full moon. People with *buda*, "evil eye," are said to be able to harm others by looking at them. Ethiopians often complain of *rasehn*, "my head" (often saying it burns); *yazorehnyal*, "spinning" (not a true vertigo); and *libehn*, "my heart" (usually indicating dyspepsia rather than a cardiac problem). Most Ethiopians have faith in traditional healers and procedures. In children, uvulectomy (to prevent presumed suffocation during pharyngitis in babies), the extraction of lower incisors (to prevent diarrhea), and the incision of eyelids (to prevent or cure conjunctivitis) are common. Circumcision is performed on almost all men and 90% of women. Ethiopians do bloodletting for *moygnbagegn*, a neurologic disease that includes fever and syncope. Chest pain is treated by cupping. Ethiopians often prefer injections to tablets. Bad news is usually given to families of patients and not the patients themselves. *Zar* is a form of spirit possession treated by a traditional healer negotiating with the alien spirit and giving gifts to the possessed patient. Health education must address Ethiopian concerns and customs.

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Due to war, political upheaval, and natural disaster, the number of refugees in the world has grown past 16 million.<sup>1</sup> From 1975 to 1993, the United States admitted 1.85 million refugees, with 1 of 140 of the US population being of refugee origin.<sup>2</sup>

Ethiopia, located in East Africa (Figure 1), is the source of one of the world's largest refugee groups, with nearly 600,000 Ethiopian and Eritrean refugees throughout the world.<sup>2</sup> Ethiopia is the size of Utah, Colorado, Arizona, and New Mexico combined, with a population of 56 million people.<sup>3</sup> More than four fifths (82%) of the population lives on about half of the land above 1,500 m (4,900 ft). The lowlands are endemic for malaria, trypanosomiasis, yellow fever, onchocerciasis, schistosomiasis, and visceral leishmaniasis.<sup>4</sup>

The country is ethnically diverse, with 70 to 80 languages belonging to four major language families—Semitic, Cushitic, Omotic, and Nilo-Saharan. Two thirds of the population speaks Oromo, Amharic, and Tigrinya, the three major languages. DNA surveys reveal a combination of Caucasian and Negroid haplotypes.<sup>5–7</sup> Orthodox Christianity (54%) and Islam (33%) make up the major religions.<sup>8</sup> Eritrea, formerly Ethiopia's northernmost province, gained independence in 1993 after a protracted civil war.

From 1983 through 1993, nearly 26,000 Ethiopian refugees entered the United States,<sup>9</sup> with estimates of the total Ethiopian population in North America as high as 250,000, many of whom do not have legal status. Ethiopians in the United States tend to be young people living in major cities—District of Columbia, Los Angeles, California, and Houston, Texas. There are more men than women, and 70% of the community is between 18 and 34 years old; 19% speak no English.<sup>10</sup> Most are thought to originate from highland Ethiopia. Many work in service industries and likely have no health insurance.

After major airlifts in 1985 and 1991, the Ethiopian population of Israel rose to more than 55,000, more than 1% of the Israeli population.<sup>11</sup> Ethiopians in Israel arrived as illiterate peasant farmers from Gondar and Tigray provinces.

Population movements may introduce new diseases as well as unique cultural beliefs about health and disease. In Israel, among more than 14,000 Ethiopian immigrants from 1980 to 1985 (most arriving from Sudan), the rate of typhoid was 40 to 2,500 cases per 100,000 immigrants; malaria developed in 9.3%; and 7.8% in the 15- to 44-years age group tested positive for syphilis.<sup>12</sup> Intestinal parasites were found in 81%, with

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**ABBREVIATIONS USED IN TEXT**

AIDS = acquired immunodeficiency syndrome  
 HIV = human immunodeficiency virus  
 STDs = sexually transmitted diseases

*Necator americanus* and *Schistosoma mansoni* most common.<sup>13,14</sup> As in Ethiopia, most were unimmunized.<sup>3</sup> Measles was the only disease that spread from Ethiopian immigrants to others; in 1985, their measles rate was more than 70 times that of other Israelis.<sup>12</sup>

The rate of active tuberculosis in more than 15,000 Ethiopian immigrants from 1980 to 1988 was 2.5%.<sup>15</sup> Drug resistance was found in 16.5% of Ethiopians sampled.<sup>16</sup> Israeli studies found that 11.5% to 18.8% of Ethiopians carried the hepatitis B surface antigen.<sup>17-19</sup> None studied tested positive for human T-cell lymphotropic virus type 1,<sup>20</sup> but 1.7% of Ethiopians arriving in Israel in 1991 (Operation Solomon) were infected with the human immunodeficiency virus (HIV), including 6.4% of men in the 31- to 50-years age group.<sup>21,22</sup> Since 1991, legal immigrants to the United States (but not visitors or students) must test negative for the HIV virus.<sup>23</sup>

The rate of diabetes mellitus among Ethiopian immigrants was 0.4%,<sup>24</sup> diffuse and multinodular goiter was present in 70%,<sup>25</sup> and 4% of adult women screened had vitamin D deficiency (especially during pregnancy).<sup>26</sup> Benign neutropenia and leukopenia have been reported

in Ethiopian Jews in Israel<sup>27,28</sup> and presumably exist in other Ethiopians. Ethiopian Jews in Israel have a high frequency of visits to family physicians for somatization disorders<sup>29</sup> and a higher suicide rate than the general population.<sup>30</sup> Information on the health of Ethiopians in North America is limited.<sup>31</sup>

It is essential for health professionals to understand the health beliefs of their patients to ensure optimum care. The following is a series of case vignettes of actual interactions from Ethiopia and Israel, along with explanations of the traditional beliefs of highland Ethiopians. Italicized words are from the Amharic language.

**General Health Beliefs****Case 1**

*An Ethiopian woman was brought to an Israeli health center with a fever of 38.5°C (101°F), accompanied by six relatives. Several people carried umbrellas, shielding the patient's head and body.*

To Ethiopians, health is a state of equilibrium within the body and between the body and the outside. Excess heat, cold, food, drink, worms, and sun can disrupt this equilibrium. The sun is frequently believed to be involved in causing disease. Excess sun is thought to cause headache, eye disease, earache, and other conditions. When the sun shines on soil moistened by rain or urine, it is believed to cause genital sores. Inhaling this may cause internal disease that can reach the heart.



**Figure 1.**—The map shows the location of Ethiopia in East Africa and Israel in the Middle East.

Ethiopians believe that when the sun strikes a part of the body that is sweating or unclean, *mitch*, loosely translated as “sunstroke,” will develop, manifesting as irritation, rash, or herpes labialis.<sup>32-35</sup>

Relatives here were protecting this febrile, sweating patient from the sun so that *mitch* would not develop. This also illustrates illness behavior, where “part of being ill among Ethiopians is to convey this to the many relatives and friends who are always present.”<sup>36</sup>

#### Case 2

A 50-year-old Ethiopian woman complained, “Rasehn, libehn, hodehn,” “my head, my heart, my stomach.” On further questioning, she explained that her head is spinning, her scalp burning, her heart is tired, and she has abdominal cramps.

Ethiopians believe that the heart is the primary bodily organ. It regulates other organs by producing heat that radiates throughout the body. Prolonged excess of cardiac activity is believed to lead to chronic fatigue, or *lib dekam* (literally, “tired heart”). The heart is believed to be located in the lower midchest and upper abdomen. When Ethiopians complain of *libehn*, “my heart,” it usually indicates dyspepsia, not a cardiac problem.<sup>33,37</sup>

Ethiopians do not relate blood to the heart. Traditionally, blood is thought of as an irretrievable substance and blood drawing “an act of aggression against a healthy body.”<sup>38</sup>

Ethiopians often complain of *yazorehnyal*, “spinning,” which is usually not a true vertigo.<sup>39</sup> They use the word *makatel*, “burning,” liberally.<sup>36</sup>

This is a common constellation of complaints (especially among women), comprising almost 4% of the visits to a primary care clinic in Addis Ababa (R.M.H., unpublished data, April 1994).<sup>40</sup> It has been reported that there is a large group of Ethiopian “chronic complainers” with emotional problems manifest by somatic symptoms that are diffuse, exaggerated, and difficult to pinpoint. A holistic approach to these patients is recommended, with limited testing and medication, active therapy (not passive listening), and involvement of the family in patient care. Patients may respond to low doses of antidepressants.<sup>40,41</sup>

### Childhood Medicine

#### Case 3

Recently, a 2-week-old Ethiopian baby was brought for his first examination, carried in a leather pouch on his mother's back. He had a thick, black, mascara-like substance painted on his eyelids. His mother reported that the baby was born at the end of 1988.

Mothers from rural Ethiopia often carry their babies in a leather binder called an *ankelba*. Newborns are fed butter, which is believed to give them a soft voice. Their eyes are often painted with *kuul*, a black powder ground from lead. This is done to protect the eyes from disease and to encourage the growth of eyebrows for beauty.<sup>42,43</sup> Lead poisoning has not been reported.

In the Ethiopian Julian calendar, the year 1989 began in September 1996.

#### Case 4

A 10-month-old baby was taken to an Israeli clinic with a sore throat. The infant's mother said that she feared he would die. After a brief examination, the physician informed the mother that medication was unnecessary. The following night, the mother brought the child to hospital, saying only that he was very ill. On examination, the physician noted blood and pus in the throat and an infected uvular stump.

Less than half of Ethiopians have access to any form of western medical care, but there is an elaborate system of traditional medicine. In all, 21 types of traditional healers have been identified that operate in both empiric and magi-coreligious domains. Examples include *yetirs awlakiy* (“tooth extractor”), *wagamiy* (“cupper”), *yiktab kitabyi* (“amulet writer”), *tonkway* (“seer”), *medhaniyt awakiy* (“herbalist”), and *ankar korach* (“uvula cutter”).<sup>33,44</sup>

Ethiopians believe that if a baby has a uvula and a sore throat develops, the baby will suffocate.<sup>45,46</sup> In Gondar, for example, nearly 99% of people surveyed believed the uvula to initiate oropharyngeal blockage, and 86% of children had undergone a uvulectomy.<sup>47</sup> The procedure is commonly done prophylactically in the first weeks of life or when the baby has a respiratory tract infection. A traditional healer may cut the uvula with scissors, a horse hair, or with a special knife. Tetanus, meningitis, or sepsis may result.<sup>42,45,46</sup>

#### Case 5

An Ethiopian woman brought her 18-month-old baby to a physician, complaining of red eyes. On examination, bilateral conjunctivitis was noted. Several fresh vertical scabs were noted over both eyelids. The child was wearing a small piece of leather on a thread around her neck and had her hair cut in patches in an asymmetric manner.

The eyelids are incised in cases of eye disease. Eyebrows are cut vertically and blood allowed to flow into the eyeballs.<sup>48</sup> In Gondar, 98.8% believed that eyelid incision is useful in treating eye disease, and 19% of children surveyed had undergone this.<sup>47</sup> Squirting milk from the mother's breast into the eye is also practiced. Other treatments involved inhaling boiling fumes of sorghum or applying herbs to the eyes.<sup>49-51</sup>

The child in this case was wearing a *kitab*, an amulet containing a scroll written by a holy man or a wizard to prevent or cure disease. Haircutting is done as a fashion and to draw attention from a vulnerable area.<sup>33,52</sup>

#### Case 6

A 10-month-old baby with diarrhea was taken to a health center. Mild gastroenteritis was diagnosed and an oral rehydration solution prescribed. Two days later, the mother returned. On examination, the physician noted that the baby was crying continuously, there was some blood in the mouth, and the lower two incisors were missing.

Ethiopian women are accustomed to their babies having diarrhea. In Gondar Province, the average child has 6.2 cases of diarrhea per year,<sup>53</sup> and it is responsible for nearly half of the deaths of Ethiopian children.<sup>54</sup>

Because diarrhea often begins around the time that the milk teeth come in, many women believe that the teeth are the cause of the diarrhea. From 6 to 10 months of age, incisors are often extracted to counter this. This procedure, known as *geg*, is performed prophylactically or therapeutically by local healers.<sup>42,51</sup> A survey in Gondar found that 84.5% believed that extracting the milk teeth was useful in the treatment of diarrheal disease, and 70% of children surveyed had undergone this procedure.<sup>47</sup>

#### Case 7

*An Ethiopian woman in Israel asked a visitor to bring her a bottle for her baby. The visitor brought a transparent bottle. The woman refused this and insisted that the bottle be translucent.*

Ethiopians believe that some people carry *buda*, the “evil eye.” Carriers of the evil eye have the ability to look at a substance and poison it. A translucent bottle would resist such powers. A common practice is to sew a lining around a transparent bottle or to cover it with a sock. Ethiopian women may keep their newborns indoors to shield them from the *buda* of others looking at them.<sup>33,55,56</sup> They also put a knife or other metal object in a baby’s bed to protect the child from the evil eye. Women often place a metal object in their hair for the same purpose.<sup>43,55</sup>

#### Case 8

*A 6-month-old Ethiopian baby weighed 7.5 kg, 100% of weight for age. At 1 year, the same child weighed 7.8 kg, 78% of weight for age.*

Many factors may be involved here, including medical illness, cultural practices, and food availability. Many Ethiopian mothers, however, do not add solid food until the baby is 1 year old or until the child can walk, because it may cause “offensive stools.”<sup>42</sup>

#### Case 9

*A 6-year-old girl was brought to her Israeli physician with a genital infection. The physician noted that the clitoris had been excised, and pus was exuding from the area.*

Many Ethiopians believe that if a woman has a clitoris, she will be hyperactive and hypersexual. In many areas of Ethiopia, the clitoris of babies and young girls is excised, usually by an older woman.<sup>46,57</sup> It is estimated that 90% of Ethiopian women undergo some type of circumcision.<sup>58,59(p7)</sup>

Three types of female circumcision are practiced in Ethiopia. Clitoridectomy may remove either the hood of the clitoris or the clitoris itself. Excision involves the total removal of the clitoris and partial or total removal of the labia minora. Infibulation involves excision along with the removal, or scraping, of the inner walls of the

labia majora. The two sides are joined together, leaving a hole smaller than a grain of corn for the voiding of urine and the passing of menses.<sup>58</sup>

Clitoridectomy is common among Amharas and Tigrinya-speaking Muslims of Tigray. Excision is practiced by Gurage, Oromos, and Shankila. Infibulation is common among Muslims in the Afar and Somali regions.<sup>57</sup> Female circumcision is uncommon among the Bengas of Wellega, parts of Gojjam, Gambella, and the southern region. Most Ethiopian women in Israel have been circumcised.<sup>60</sup> No information exists on the rate of this practice outside Ethiopia.

#### Case 10

*An Ethiopian woman brought her child to a physician, who diagnosed tonsillitis and prescribed oral penicillin. The mother refused the oral medication and demanded an injection.*

Injections are believed to work rapidly and efficiently and are often preferred over tablets. Pills may be thought of as food, and unknown food may be suspected of being dangerous or poison.<sup>33</sup>

#### Case 11

*A 15-year-old Ethiopian boy presented with severe kyphoscoliosis, present for five years. On examination, besides his spinal deviation, he had several 3- to 4-cm burn lesions encircling the affected area.*

In cases of lung inflammation, spinal deviation, or joint problems in all ages, small burns are made on the chest or back with a red-hot piece of iron, charcoal, or burning stick.<sup>51,52</sup> Headaches or chest pain may be treated by heating bicycle spokes and flicking them against the area, known as *tatateh*.

### Adult Medicine

#### Case 12

*A 60-year-old Ethiopian woman mentioned to her Israeli physician that she was pregnant. He asked her the date of her last menstruation, and she replied 12 years before. She explained that the fetus had died and turned to bone.*

When an Ethiopian woman goes into menopause, she may gain weight and have abdominal distention. She may attribute this to pregnancy that turns to bone, *attent hono kere* (literally, “it stays bone”).<sup>32</sup> This may be casually mentioned to a physician at any time. It is treated with a variety of traditional medicines and is not usually a cause for distress. Ethiopians also believe that a woman may be pregnant for more than nine months.

#### Case 13

*A 32-year-old Ethiopian woman in her sixth month of pregnancy complained of weakness and fatigue. On examination, her blood pressure was 90/50 mm of mercury, and her heart rate was 120 per minute. Her hemoglobin was 100 grams per liter (10 grams per dl), with signs of normocytic, normochromic anemia. The results*

of an examination were unremarkable, except for a fresh scab noted over the right brachial vein.

Symptoms of a traditional disease known as *moygnbagegn* (literally, “get a fool”) may include syncope, fever, headache, abdominal cramps, or stiff neck. These may be poorly defined, but treatment is specific: bloodletting from the brachial vein with a razor blade to expel the “black blood.”<sup>32</sup> If there is no person available to incise the brachial vein, Ethiopians may take a razor blade and make multiple small incisions on the forearm. Many Ethiopians have scars over their brachial veins from previous bloodlettings.<sup>52,61</sup>

An epidemic of *moygnbagegn* occurred in Gondar in 1980, correlating with a meningitis outbreak. In this epidemic, 9% of persons presenting to emergency departments had hypovolemic shock from bloodletting. Some residents constantly carried a razor blade with them in preparation for emergency venisection. Western medicine was believed to worsen the problem.<sup>61</sup>

#### Case 14

*An Ethiopian in Israel complained of weakness and fever for four days. He self-diagnosed malaria, but said he had not taken any medication. The patient was afebrile, and the results of an examination were unremarkable. After further questioning, he admitted that he had treated himself with medicine borrowed from a neighbor who recently returned from Ethiopia.*

Ethiopians from malarial areas often attribute their fevers and other diseases to malaria. When they feel tired or have loss of appetite or a common cold, they may claim to have malaria, even without a fever.<sup>32,62</sup>

Ethiopians in Israel often believe that no malaria medication exists there and purchase chloroquine in large amounts over the counter when visiting Ethiopia. When they feel “malarial,” they treat themselves (B. Teferedegne, MD, oral communication, May 1994). A patient may have chloroquine toxicity or partially treated malaria that does not appear on a blood test.

#### Case 15

*An Ethiopian presented with cavitary tuberculosis. When asked how he acquired this, he replied that the previous week, he was riding in a taxi with the window open and the wind blew on his chest.*

Ethiopians believe cold air and blowing winds to be dangerous. Blowing winds may cause *wugat*, “pleuritic chest pain,” as well as shortness of breath, fatigue, and localized pains in any area, often called *birrd* (literally, “cold”).<sup>32</sup> Ethiopians often keep all windows closed to protect against this. They may dress with towels or cloths draped over their head, neck, and shoulders.<sup>33</sup>

Chest pain is often treated by cupping, known as *wagemt*. This is done either by lighting cotton on fire in a glass and placing it on the painful area or by making an incision with a razor or knife, placing an animal horn over the incision, and sucking out about three hornfuls of blood. The blood is placed in water to look for evidence of clotting, which is believed to show that the

pathogenic substance has been removed.<sup>33,52</sup>

Hot springs are popular with patients with localized back pain, rheumatism, and skin disease.<sup>63</sup>

#### Case 16

*An Ethiopian complained to a physician: “Wosfate aykebelign,” “My ascaris worms will not eat.”*

Amharas believe that the stomach is an inert organ housing ascaris worms, *wosfat*. These worms transform drink and food into waste and may be angered by a lack of good food. The source of the appetite is ascaris worms that want to eat. In this case, the patient is expressing a loss of appetite by saying that his worms are not eating.<sup>33,34,39</sup>

#### Case 17

*A 24-year-old Ethiopian man complained of a urethral discharge and dysuria. He denied engaging in sexual activity and attributed his symptoms to urinating under a full moon.*

In the Ethiopian concept, contagious (*telalafy*) disease includes skin disease (ulcers and boils), measles, smallpox, typhus, whooping cough, and sexually transmitted diseases (STDs).<sup>34,49</sup> Ethiopians also attribute STDs to many things besides sexual intercourse: contagion from a female dog, urinating facing the full moon, or urinating on a hot stone or where a female dog recently urinated.<sup>32,50,64</sup>

Some Ethiopians believe that all STDs are cured by drinking sheep fat. Cactus milk is a traditional cure for gonorrhea. Syphilis cures include having several sexual partners to weaken the disease, washing lesions with the blood of a goat, or drinking one's urine. Some would take 12 parts of a black male goat—head, stomach, intestine, and so forth—in the belief that this would banish the disease from those organs.<sup>63</sup>

Homosexuality is rare in the Ethiopian culture; STDs and the acquired immunodeficiency syndrome (AIDS) are spread mainly through heterosexual relations. Needle contamination from injections from “local injectors” and traditional practices may be additional factors.<sup>65,66</sup>

The acquired immunodeficiency syndrome is an increasing problem in Ethiopia. Surveys showed an HIV prevalence of 11% to 13% in urban sites in 1992 to 1993, with official estimates that 5.2% of adults are currently infected with the AIDS virus.<sup>67</sup> Of 310 consecutive newborn admissions to an Addis Ababa hospital, 11.7% tested positive for HIV.<sup>68</sup> Predictions are that there will be approximately 1.5 million AIDS orphans within a decade.<sup>67</sup>

### Psychosocial Aspects

#### Case 18

*A 27-year-old university-educated Ethiopian man was treated for herpes zoster. Nine months later, Kaposi's sarcoma developed, and he tested positive for HIV. His elder brother was informed that he had AIDS,*

with a poor prognosis. His western physician was asked not to disclose the diagnosis to the patient for fear that he would commit suicide.

In Ethiopian society, bad news is not given to a patient. It has been suggested that physicians only partially disclose bad news to Ethiopians in North America. Physicians should attempt to develop a warm relationship with the patient and family and involve the family in the patient's care. Because suspicion is a part of Ethiopian culture, patients should be assured of confidentiality.<sup>10,41</sup>

### Case 19

A 35-year-old Ethiopian woman was noted to be psychotic. Family members slaughtered a chicken, roasted coffee beans, and purchased a new dress for her.

Ethiopians commonly believe that mental illness is caused by evil spirits and should be treated with holy water and exorcism.<sup>34,69</sup> *Zar* is a form of East African spirit possession that is more common in women. In the conversion *zar* described in this case, the spirit takes over the woman's body, making her "the horse." She may eat embers and hit her head for hours or days. Neighbors and relatives sing and support the patient to appease the spirit. The *zar* is appeased by bribery and may ask for coffee, clothes, beads, and the like. There is no cure, and the *zar* spirit is rarely exorcised.

The possessed person may become a life member of a *zar* group, a form of a group therapy society, headed by a *balezar*. A *balezar* is usually a man who has *zar* and who has literally come to terms with it. He may go into a trance, lure out another person's *zar*, and negotiate with it.<sup>70-75</sup>

Ethiopians call a variety of psychiatric symptoms and physical disorders *zar*. Of Ethiopian Jews referred to a mental health center in Netanya, Israel, 14% attributed their problem to *zar*. In Israel, using a culture-sensitive strategy, physicians may refer *zar* patients to traditional healers.<sup>76</sup>

### Discussion

These case vignettes offer examples of common Ethiopian conceptions. Other common beliefs include that epilepsy is caused by evil spirits, acquired by touching a seizing person and treated by smelling smoke from matches; that hepatitis is caused by a bat or bird flying over a person and is treated with herbs; and that there are multiple causes of diarrhea, including journeying on a sunny day and jumping over diarrheal stool. The overall process of labor and delivery is related to a spiritual interaction, with good and evil spirits warring during the labor process.<sup>32,50,56,77,78</sup>

Ethiopians often have more confidence in traditional medicine than in western treatments, and in Ethiopia most will first seek holy water or treatment from a traditional healer before considering western medicine.<sup>35,44,79-81</sup> In Israel, where virtually an entire ethnic group resides, there seems to be no shortage of traditional healers, and many traditional practices contin-

ue.<sup>82,83</sup> In North America, where the Ethiopian population is younger and less cohesive, traditional healers are far less common. This "shortage" may increase their frustration with the North American health system. It should not be assumed that because an Ethiopian abroad is educated, that person does not hold many Ethiopian beliefs or revert to them in times of illness.<sup>10</sup>

It is important to understand and address traditional practices and beliefs that may not be verbalized. Physicians not versed in Ethiopian culture may not understand why a mother fears that her child with pharyngitis will die. They may miss the importance of scars over the eyelids, a small scab over the brachial vein of an anemic woman, or why the incisors of a baby are missing. Patients may benefit from an assurance that taking blood will not damage their health. An interpreter may be useful, both for translating and for explaining the culture.<sup>84,85</sup>

Cultural knowledge is useful in choosing therapy. It is likely that Ethiopians would prefer a tuberculosis regimen that includes injections to one with only tablets or benzathine penicillin over tablets when appropriate.

Health education must address Ethiopian concerns and customs. Successful education programs have been reported using an anthropologic approach to target many areas, including AIDS prevention, health services, nutrition, avoiding home accidents, and the use of prescription drugs.<sup>86-88</sup> Group discussions and role playing were found more effective than lectures.<sup>89</sup>

Ethiopian culture and beliefs may differ by region, but concepts here are largely "pan-Ethiopian and Eritrean" and should be considered in treating Ethiopians abroad.

### Additional Reading

The following is the best single volume to consult for information about Ethiopian medicine:

Kloos H, Ahmed Zein Z (Eds): *The Ecology of Health and Disease in Ethiopia*. Boulder, Colo, San Francisco, Calif, and Oxford, Engl, Westview Press, 1993

Two issues of the *Israel Journal of Medical Sciences* have been devoted to Ethiopian immigrants in Israel:

Rubenstein A (Ed): Medical and epidemiological aspects of the Ethiopian immigration to Israel. *Isr J Med Sci* 1991; 27(5):241-299

Rubenstein A (Ed): The Ethiopian immigrations to Israel—Medical, epidemiological and health aspects. *Isr J Med Sci* 1993; 29(6-7):331-442

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